

Case 11325

Uncommon pelvic mass: GIST mimicking adnexal tumour

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Section: Genital (Female) Imaging

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Patient: 66 year(s), female

Authors' Institution

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Clinical History

A 66-year-old woman was referred to our Institute to define a sonographic finding of a pelvic mass. She presented with a history of pelvic pain, asthenia and weight loss. Gynaecological examination : Upper deflection of the cervix by a compressive lesion in the posterior cul-de-sac. CA125= normal.

Imaging Findings

The patient underwent a pelvic MR that showed a large, lobulated tumour localized in the pouch of Douglas, measuring 15, 4x10, 6x11, 7cm.

It did not invade the uterus or the sigmoid colon and it was in close relation with the intestinal loops. The ovaries were not visualized.

The mass was heterogeneous, with focal areas of hypointensity on T1W1 showing high-signal on T2WI, and avid gadolinium uptake on fat-suppressed T1W1. These areas also demonstrated restricted diffusion, suggesting solid malignant nature. Other areas showing intermediate signal on

T1WI were hyperintense on T2WI and did not enhance, which suggests hemorrhagic and necrotic nature.

The patient underwent a small bowel and rectal partial resection with total hysterectomy and bilateral anexectomy. The resected specimen contained, in a paraintestinal location, a 12cm partially cystic and necrotic nodular tumour.

The histopathologic diagnosis was small bowel malignant GIST.

Discussion

Gastrointestinal stromal tumours (GISTs) are mesenchymal tumours which account for less than 1% of all gastrointestinal tumours [1, 2]. They can occur throughout the GI tract, mesentery, omentum and retroperitoneum, with 20-30% arising in the small bowel [3, 4].

They range from benign tumours to aggressive tumours (10-30%) [3].

The majority of GISTs presents at ages above 40 years. Gastrointestinal hemorrhage due to mucosal ulceration is a frequent symptom. Abdominal pain, vomiting, weight loss and intestinal obstruction can also occur [4].

Extraluminal and eccentric growth is frequently encountered in malignant small intestine GISTs, which can encase non contiguous segments [2, 4].

The solid component of GISTs is typically hypointense on T1WI and shows intermediate/high signal intensity on T2WI, enhancing avidly following the administration of gadolinium. Signal intensity of focal hemorrhagic areas varies according to the age of hemorrhage [1, 2, 5].

Small bowel GIST's 5-year survival rate is 40-50% [1].

Female pelvic masses commonly arise from reproductive organs, however non gynaecological lesions originating from urinary and gastrointestinal systems, from the peritoneum, retroperitoneum and from adjacent soft tissues are important pitfalls that radiologists and gynaecologists must take into account [1].

Identification of the location of the mass (intra or extraperitoneal) is based on anatomic landmarks and should also take into account the patient's age, clinical and gynaecological history [1].

MRI is the modality of choice to evaluate US and CT indeterminate pelvic masses and has capability to differentiate benign from malignant lesions [1, 6].

In our case MR was performed to characterize an indeterminate adnexal mass that revealed to be of gastrointestinal origin.

Despite being an uncommon pelvic mass, GISTs must be considered in the differential diagnosis of large adnexal masses, since they may have similar imaging characteristics to ovarian cancer and its therapy and prognosis are very different.

Final Diagnosis

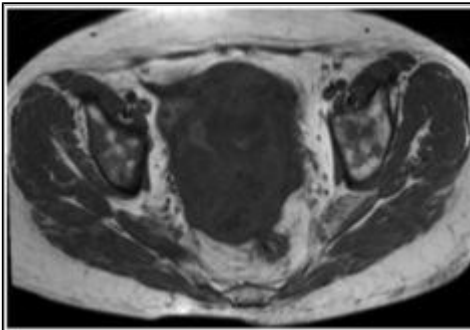
Small bowel malignant GIST

Differential Diagnosis List

Dygerminoma , Adult Granulosa Cell Tumor, Mixed mullerian tumor, Ovarian solid metastasis, Leiomyosarcoma, Subserosal leiomyoma, Schwannoma, Neurofibroma, Lymphoma

Figures

Figure 1 Axial non-enhanced T1-weighted MR image

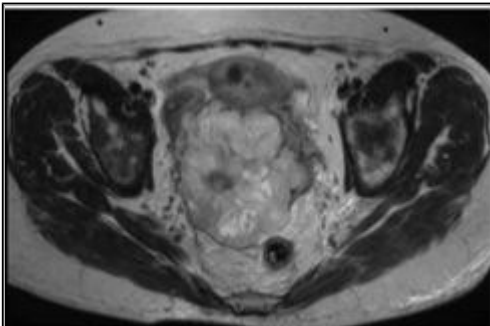


Axial non-enhanced T1-weighted MR image demonstrates a heterogeneous lobulated pelvic mass in the pouch of Douglas predominantly hypointense with focal areas of intermediate signal and of remarkably hypointense signal.

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Area of Interest: Genital / Reproductive system female;
Imaging Technique: MR;
Procedure: Diagnostic procedure;
Special Focus: Neoplasia;

Figure 2 Axial T2- weighted MR image



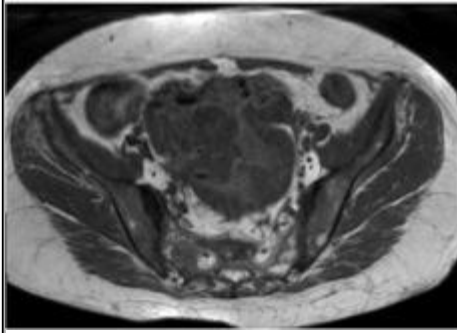
Axial T2- weighted MR image shows a hyperintense mass with areas of strong hyperintense signal.

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Figure 3 Axial non-enhanced T1-weighted MR image



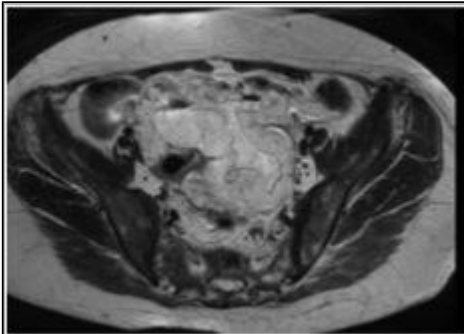


Tumour areas of hypointensity on T1W1 correspond to areas of hyperintensity on T2WI. Tumour areas of intermediate signal on T1W1 correspond to areas of strong hypersignal on T2WI.

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Figure 4 Axial non-enhanced T2-weighted MR image



Tumour areas of hypointensity on T1W1 correspond to areas of hyperintensity on T2WI. Tumour areas of intermediate signal on T1W1 correspond to areas of strong hypersignal on T2WI.

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Figure 5 Sagittal T2-weighted image



The tumour extends above the sacral promontory and displaces the uterus anteriorly and the

sigmoid colon posteriorly.

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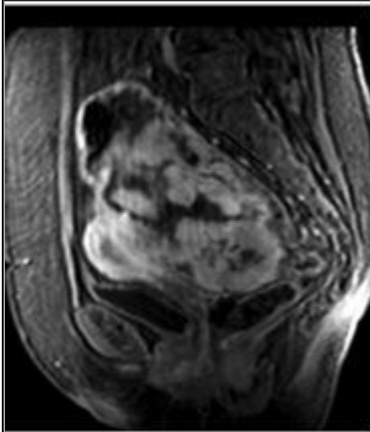
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Figure 6 Sagittal fat-suppressed gadolinium-enhanced T1-weighted image



Sagittal fat-suppressed gadolinium-enhanced T1-weighted image show avid contrast uptake by the solid component of the tumour.

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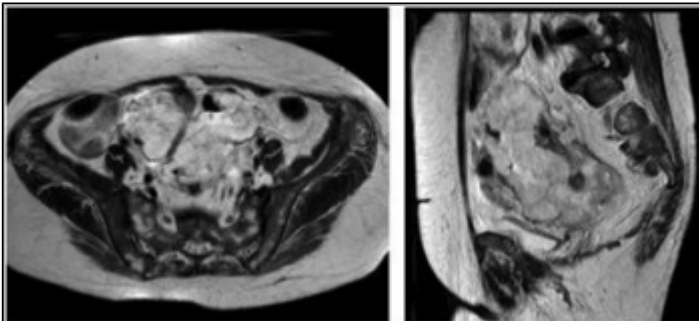
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Figure 7 a) Axial T2-weighted image. b) Sagittal T2-weighted image.



Axial T2-weighted image. b) Sagittal T2-weighted image. The tumour was in close relation with intestinal loops (arrow) , that crossed the tumour .

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Area of Interest: Genital / Reproductive system female;

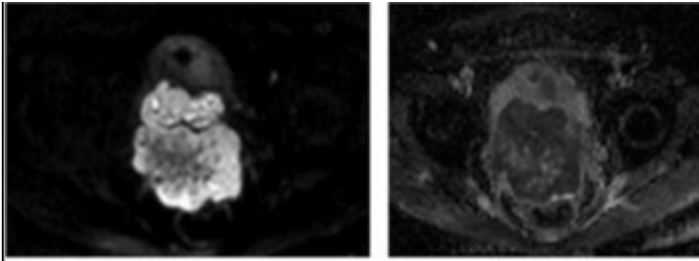
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Procedure: Diagnostic procedure;

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Figure 8 a) DWI sequence b) ADC map





The tumour shows restricted diffusion.

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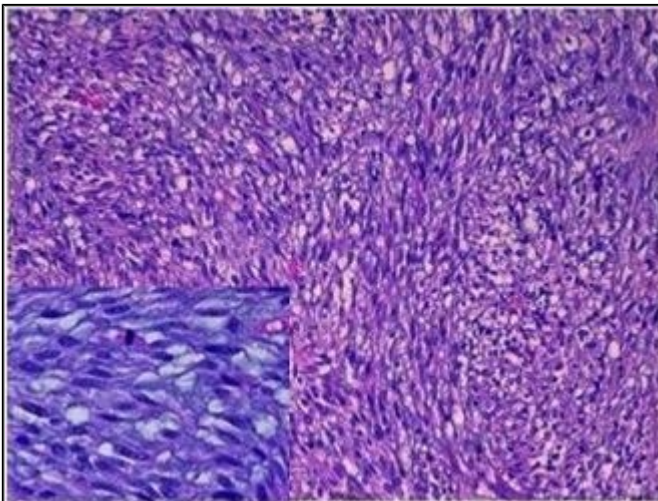
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Imaging Technique: MR;

Procedure: Diagnostic procedure;

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Figure 9 Tumour



The tumor showed short intersecting fascicles of fusiform, pleomorphic cells with frequent mitotic figures (>10 mitosis/50HPF) (islet, H-E, 400x). (H-E, 200x).

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Area of Interest: Genital / Reproductive system female;

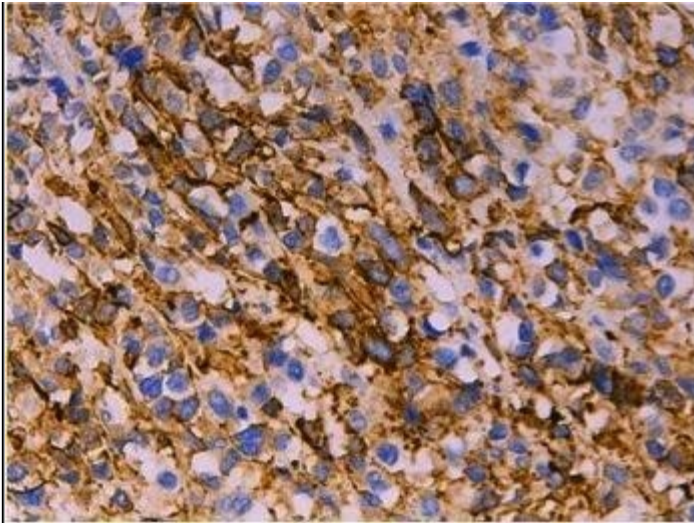
Imaging Technique: Experimental;

Procedure: Diagnostic procedure;

Special Focus: Neoplasia;

Figure 10 Neoplastic cells



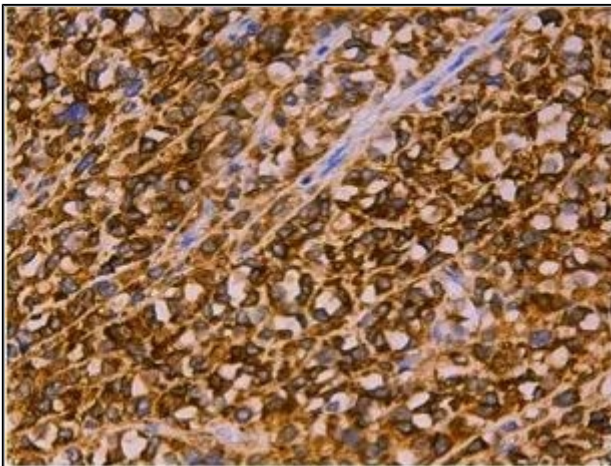


The neoplastic cells were positive for caldesmon

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Area of Interest: Genital / Reproductive system female;
 Imaging Technique: Experimental;
 Procedure: Diagnostic procedure;
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Figure 11 Neoplastic cells



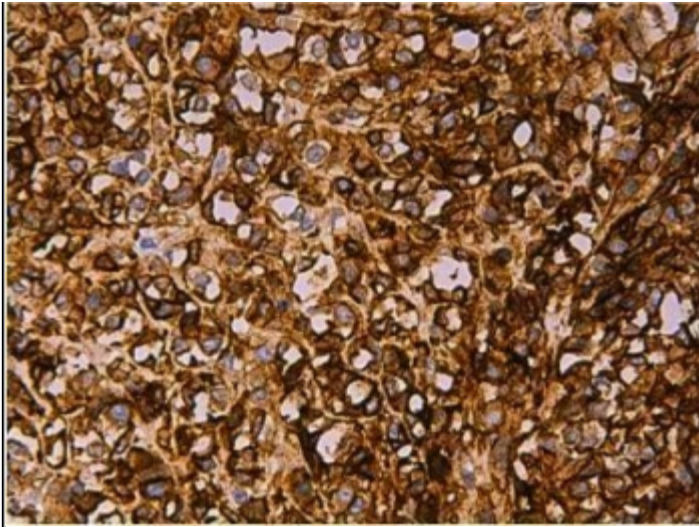
The neoplastic cells were positive for CD117

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Area of Interest: Genital / Reproductive system female;
 Imaging Technique: Experimental;
 Procedure: Diagnostic procedure;
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Figure 12 Neoplastic cells



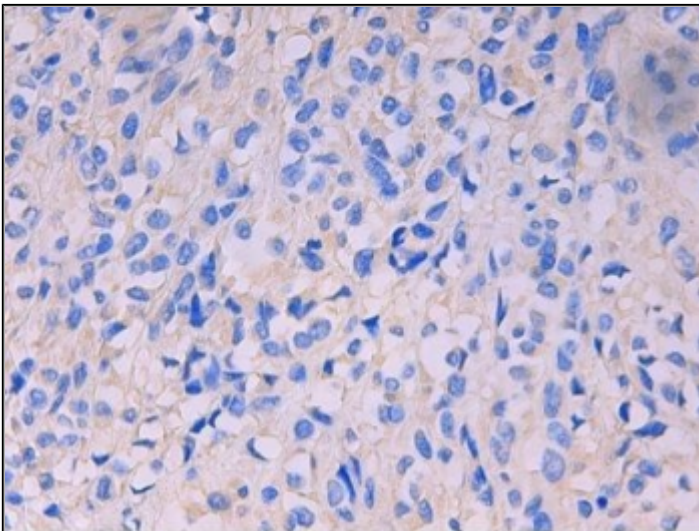


The neoplastic cells were positive for DOG1

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Figure 13 Neoplastic cells



The neoplastic cells were negative for muscle markers namely actin and desmin

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Special Focus: Neoplasia;

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Citation

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